

IN THE CLAIMS:

The following is a complete listing of the claim
listings and all earlier versions.

earlier

5.5 B.1 }
1. (Currently Amended) An information processing apparatus
comprising:
storage means for storing printing data to which a printing attribute has been
added;
contour information extraction means for extracting contour information for
said printing data based on said the printing attribute added to said the printing data that are
stored in said storage means;
layout reference information setting means for employing said setting layout
reference information based on the contour information; extracted by said contour
information extraction means, to determine layout reference information to be the layout
reference information being used as a reference when laying out said the printing data; and
layout means for laying out said the printing data based on said the layout
reference information determined set by said layout reference information setting means.

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2. (Currently Amended) An information processing apparatus
according to claim 1, wherein said the layout reference information consists of comprises a
layout reference point and a layout reference size.

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3. (Currently Amended) An information processing apparatus according to claim 1, wherein said layout means designates the size of said the printing data.

4. (Currently Amended) An information processing apparatus according to claim 1, further comprising:
a display, ~~means~~ for use in displaying the printing data, stored in said storage ~~means~~, that is based on the printing attributes that are added to said the printing data,

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wherein said contour information extraction means ~~employs the resolution of said display means to extract~~ extracts the contour information for said the printing data displayed on said display ~~means~~ based on resolution of said display.

5. (Currently Amended) An information processing apparatus according to claim 1, further comprising:
a display, ~~means~~ for use in displaying the printing data, stored in said storage ~~means~~, that is based on the printing attributes that are added to said the printing data;

printing means for printing the printing data stored in said storage ~~means~~ in accordance with the printing attributes added to said the printing data;

enlargement means for enlarging said the printing data and displaying the enlarged printing data on said display means based on a difference in the resolutions between said display and said printing means; and

reduction means for reducing said printing data and displaying the reduced printing data on said display means the contour information,

wherein said enlargement means employs a difference in the resolutions between said display means and said printing means to display said enlarged printing data on said display means;

wherein said contour information extraction means employs the resolution of said display means to extract extracts the contour information for said the printing data displayed on said display means based on the enlarged printing data, and

wherein, after said the contour information is extracted by said contour information extraction means, said reduction means reduces said enlarged printing data the contour information to the original size, and displays the resultant printing data.

6. and 7. (Canceled).

8. (Currently Amended) An information processing apparatus according to claim 1, wherein, when said printing data are graphic data, said layout reference information setting means sets said the layout reference information based on the smallest circumscribed rectangle that is to be employed to enclose of a visible portion of said the printing data.

9. - 11. (Canceled).

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12. (Currently Amended) An information processing apparatus according to claim 1, wherein ~~said~~ the printing data includes character/graphic data and data for a ~~dragonfly that is used as a positioning mark~~ used when printing ~~said~~ the character/graphic data.

13. - 15. (Cancelled).

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16. (Currently Amended) An information processing apparatus according to claim 1, further comprising:
bar code data input means for entering bar code data, and
~~wherein said printing data are bar code data that consist of a plurality of bars having different width, and~~
wherein said layout means lays out ~~said bar code by using said code data that are~~ based on the bar code data entered by said bar code data input means.

17. - 19. (Canceled).

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20. (Currently Amended) An information processing apparatus according to claim 1, further comprising:
first and second printing means that have different printing resolutions;

selection means for selecting either said first or said second printing means;
and
additional printing information setting means for setting, for said printing means selected by said selection means, additional printing information that is required when printing the printing data; and
print control means for permitting said printing means selected by said selection means to print ~~said~~ the printing data in accordance with the additional printing information.

21. and 22. (Canceled).

23. (Currently Amended) An information processing apparatus according to claim 1, further comprising:
printing data input means for entering ~~said~~ the printing data received from an external information processing apparatus together with the printing attributes that are added to ~~said~~ the printing data.

24. (Canceled).

25. (Currently Amended) An information processing apparatus according to claim 1, further comprising:

printing data output means for outputting ~~said~~ the printing data, together with ~~said~~ the printing attributes, to an external information processing apparatus.

26. (Canceled).

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27. (Currently Amended) An information processing apparatus according to claim 1, further comprising:

printing data selection means for selecting a plurality of printing data-sets;

and

grouping means for assembling the plurality of printing data into a single data-set body of group said plurality of printing data sets that are selected by said printing data selection means data;

group data storage, for use in storing the group data obtained by said

grouping means;

retrieval means for retrieving the group data from said group data storage;

modification means for modifying the group data that is retrieved by said

retrieval means; and

control means for, even when the retrieved group data is modified by said

modification means, inhibiting changing of the group data stored in said group data storage.

28. (Canceled).

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29. (Currently Amended) An information processing apparatus according to claim 27, further comprising:

printing data selection means for selecting a plurality of printing data;

grouping means for assembling the plurality of printing data into a single body of group data;

group data storage, means for use in storing ~~said the~~ group data obtained by said grouping means;

retrieval means for retrieving ~~said the~~ group data from said group data storage means;

~~change~~ modification means for ~~changing said~~ modifying the group data that is retrieved by said retrieval means; and

control means for changing the group data stored in said group data storage means in synchronization with the ~~changing~~ modifying of ~~said the~~ retrieved group data by said ~~change~~ modification means.

30. (Canceled).

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31. (Currently Amended) An information processing method comprising:

a contour information extraction step, of extracting contour information ~~for~~ printing data based on a printing attribute that has been added to ~~said~~ printing data stored in storage means;

a layout reference information setting step, of ~~employing said~~ setting layout reference information based on the contour information; extracted at in said contour information extraction step, ~~to determine layout reference information to be~~ the layout reference information being used as a reference when laying out ~~said the~~ printing data; and

a layout step, of laying out ~~said the~~ printing data based on ~~said the layout reference information determined at~~ set in said layout reference information setting step.

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32. (Currently Amended) An information processing method according to claim 31, wherein ~~said the~~ layout reference information ~~consists of~~ comprises a layout reference point and a layout reference size.

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33. (Currently Amended) An information processing method according to claim 31, wherein ~~the~~ layout position for and ~~the~~ size of ~~said the~~ printing data are designated at in said layout step.

34. (Currently Amended) An information processing method according to claim 31, ~~for an information processing apparatus~~ further comprising:

a display means for control step, of displaying the printing data, stored in ~~said the~~ storage means, ~~that is on a display~~ based on the printing attributes that are added to ~~said the~~ printing data,

wherein, at in said contour information extraction step, ~~the resolution of said display means is employed to extract~~ the contour information for said printing data displayed on ~~said~~ the display means.

35. (Currently Amended) An information processing method according to claim 31, ~~for an information processing apparatus that comprises~~ further comprising:

a display means, for control step, of displaying the printing data, stored in ~~said the~~ storage means, that is on a display based on the printing attributes that are added to ~~said the~~ printing data; and

a printing means for control step, of printing the data stored in ~~said the~~ storage means, by using printing means in accordance with the printing attributes added to ~~said the~~ printing data;

wherein an enlargement step, of enlarging the printing data based on a difference in the resolutions between ~~said the~~ display means and, said the printing means is employed to display ~~said the~~ enlarged printing data on said the display means; and

a reduction step, of reducing the contour information, wherein, at in said contour information extraction step, ~~the resolution of said display means is employed to extract~~ the contour information for ~~said the~~ printing data displayed on said display means is extracted based on the enlarged printing data, and

wherein, after ~~said the~~ contour information is extracted at in said contour information extraction step, ~~said enlarged printing data~~ the contour information are reduced to the original size, and ~~the resultant printing data are displayed in~~ said reduction step.

36. and 37. (Canceled).

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38. (Currently Amended) An information processing method according to claim 31, wherein, ~~when said printing data are graphic data, at in~~ said layout reference information setting step, ~~said the~~ layout reference information is set based on the ~~smallest~~ circumscribed rectangle ~~that is to be employed to enclose of~~ a visible portion of ~~said the~~ printing data.

39. - 41. (Canceled).

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42. (Currently Amended) An information processing method according to claim 31, wherein ~~said the~~ printing data includes character/graphic data and data for a ~~dragonfly that is used as a positioning mark~~ used when printing ~~said the~~ character/graphic data.

43. - 45. (Canceled).

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46. (Currently Amended) An information processing method according to claim 31, further comprising:
a bar code data input step, of entering bar code data,
~~wherein said printing data are bar code data that consist of a plurality of bars~~
having different widths, and

wherein, ~~at in~~ said layout step, ~~said~~ bar code is laid out ~~by using said code~~
~~data that are~~ based on the code data entered ~~at in~~ said code data input step.

47. - 49. (Canceled).

50. (Currently Amended) An information processing method according
to claim 31, ~~for an information processing apparatus comprising first and second printing~~
~~means that have different printing resolutions;~~ further comprising:

a selection step₁ of selecting either ~~said~~ first or ~~said~~ second printing means,
the first and said second printing means having different resolutions;

an additional printing information setting step of setting additional printing
information, for the one of the printing means selected in said selection step, that is
required when printing the printing data; and

a print control step₂ of permitting said printing means selected ~~at in~~ said
election step to print ~~said~~ the printing data in accordance with the additional printing
information.

51. and 52. (Canceled).

53. (Currently Amended) An information processing method according
to claim 31, further comprising:

a printing data input step, of entering ~~said~~ the printing data received from an external information processing apparatus together with the printing attributes that are added to ~~said~~ the printing data.

54. (Canceled).

55. (Currently Amended) An information processing method according to claim 31, further comprising:

a printing data output step, of outputting ~~said~~ the printing data, together with ~~said~~ the printing attributes, to an external information processing apparatus.

56. (Canceled).

57. (Currently Amended) An information processing method according to claim 31, further comprising:

a printing data selection step, of selecting a plurality of printing data-sets;

and

a grouping step, of assembling the plurality of printing data into a single data set body of group ~~said plurality of printing data sets that are selected at said printing data selection step~~ data;

a group data storage control step, of storing the group data obtained in said grouping step into group data storage;

a retrieval step, of retrieving the group data from the group data storage;
a modification step, of modifying the group data that is retrieved in said
retrieval step; and
a control step, of, even when the retrieved group data is modified in said
modification step, inhibiting changing of the group data stored in the group data storage.

58. (Canceled).

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59. (Currently Amended) An information processing method according
to claim 57 31, ~~for an information processing apparatus including group data storage means~~
~~for storing said group data obtained at said grouping step~~, further comprising:

a printing data selection step, of selecting a plurality of printing data;
a grouping step of assembling the plurality of printing data into a single
group data;
a group data storage control step, of storing the group data obtained in said
grouping step into group data storage;

a retrieval step, of retrieving ~~said~~ the group data from ~~said~~ in group data
storage means;

a ~~change~~ modification step, of ~~changing said~~ modifying the group data that
is retrieved at in said retrieval step; and

a control step, of changing group data stored in ~~said the~~ storage means in synchronization with the ~~changing~~ modifying of ~~said the~~ retrieved group data ~~at in~~ said ~~change~~ modification step.

60. (Canceled).

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61. (Currently Amended) A storage medium, which is readable by a computer and on which a computer program is stored, said computer program comprising:
a contour information extraction module for extracting contour information ~~for printing data~~ based on a printing attribute added to ~~said~~ printing data;
a layout reference information setting module for ~~employing said~~ setting layout reference information based on the contour information; extracted by said contour information extraction module means, ~~to determine layout reference information to be the~~ layout reference information being used as a reference when laying out ~~said the~~ printing data; and
a layout module for laying out ~~said the~~ printing data based on ~~said the layout reference information determined set~~ by said layout reference information setting ~~means~~ module.

62. - 132. (Canceled).

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133. (Currently Amended) A graphic processing apparatus comprising:
storage, ~~means for use in~~ storing graphic data to which a printing attribute
has been added;
contour information extraction means for extracting contour information for
~~said graphic data~~ based on ~~said the~~ printing attribute ~~that has been~~ added to ~~said the~~ graphic
data that are stored in said storage ~~means~~; and
magnification means for performing a magnification process ~~for said on the~~
graphic data based on ~~said the~~ contour information extracted by said contour information
extraction means.

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134. (Currently Amended) A graphic processing apparatus according to
claim 133, further comprising:

magnification designation means for specifying an enlargement size or a
reduction size; and

contour size calculation means for calculating a size of the contour
information extracted by said contour information extraction means,

wherein, ~~to perform said magnification process,~~ said magnification means
calculates a magnification rate based on a the calculated size, ~~which is obtained from said~~
~~contour information extracted by said contour information extraction means,~~ and ~~said the~~
enlargement size or ~~said the~~ reduction size, ~~which is specified by said magnification~~
designation means.

135. - 139. (Canceled).

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140. (Currently Amended) A graphic processing apparatus according to claim 133, wherein ~~said~~ contour information extraction means includes:
classification means for, in accordance with a the printing attribute, sorting ~~said object~~ the graphic ~~pattern~~ data into a first class, including a common pattern such as a single line segment or a circle, a second class, including a mufti-line graphic pattern formed of a plurality of lines, or a third class, including a graphic pattern having an offset graphic pattern that differs from ~~the~~ original pattern type of the graphic data; and
extraction means; for extracting ~~said~~ the contour information from the graphic data in accordance with ~~said~~ the class provided by said classification means.

141. - 150. (Canceled).

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151. (Currently Amended) A graphic processing method comprising:
a storage step₁ of storing in storage ~~means~~ graphic data to which a printing attribute has been added;
a contour information extraction step₂ of extracting contour information ~~for~~ ~~said graphic data~~ based on ~~said~~ the printing attribute ~~that has been added to~~ ~~said~~ the graphic data that are stored in said storage ~~means~~; and

a magnification step₁ of performing a magnification process for ~~said~~ the graphic data based on ~~said~~ the contour information extracted ~~at~~ in said contour information extraction step.

152. (Currently Amended) A graphic processing method according to claim 151, further comprising:

a magnification designation step₁ of specifying an enlargement size or a reduction size; and

a contour size calculation step₁ of calculating a size of the contour information extracted in said contour information extraction step,

wherein, ~~to perform said magnification process, at~~ in said magnification step, a magnification rate is calculated based on a the calculated size, ~~which is obtained from said contour information extracted at said contour information extraction step; and said~~ the enlargement size or ~~said~~ the reduction size, ~~which is specified at said magnification designation step.~~

153. - 157. (Canceled).

158. (Currently Amended) A graphic processing method according to claim 151, wherein said contour information extraction step includes:

a classification step₁ of, in accordance with a the printing attribute, sorting ~~said object~~ the graphic ~~pattern~~ data into a first class, including a common pattern such as a

single line segment or a circle, a second class, including a multi-line graphic pattern formed of a plurality of lines, or a third class, including a graphic pattern having an offset graphic pattern that differs from the original pattern type of the graphic data; and

an extraction step₂ of extracting ~~said the~~ contour information in accordance with ~~said the~~ class provided at in said classification step.

159. - 168. (Canceled).

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169. (Currently Amended) A storage medium in which is stored a control program for permitting a computer to perform a graphic process, said control program comprising:

code for a storage step₂ of storing in storage ~~means~~ graphic data to which a printing attribute has been added;

code for a contour information extraction step₂ of extracting contour information ~~for said graphic data~~ based on ~~said the~~ printing attribute ~~that has been added to said the~~ graphic data that are stored in ~~said the~~ storage ~~means~~; and

code for a magnification step₂ of performing a magnification process ~~for said on the~~ graphic data based on ~~said the~~ contour information ~~extracted at said contour information extraction step.~~

170. (Currently Amended) An information processing apparatus comprising:

storage, means for use in storing printing data with added printing attributes;
contour information extraction means for ~~employing said~~ extracting contour
information based on the printing attributes for ~~said the~~ the printing data that are stored in said
storage ~~means to extract contour information for said printing data;~~

layout reference information setting means for ~~employing said~~ setting layout
reference information that is to be used as a reference for layout of the printing data based
on the contour information extracted by said contour information extraction means ~~to set~~
~~layout reference information that is to be used as a reference for the layout of said printing~~
~~data;~~ and

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layout means for laying out ~~said the~~ the printing data based on ~~said the~~ the layout
reference information ~~determined~~ set by said layout reference information setting means,
wherein, when ~~said the~~ the printing data is character data, said layout reference
information setting means ~~determines said~~ sets the layout reference information in
accordance with ~~the~~ height of a visible portion of a predetermined reference character and
the width of a visible portion of ~~said the~~ the printing data.

171. (Currently Amended) An information processing apparatus
according to claim 170, further comprising:

first character size designation means for designating ~~the~~ size of character
data ~~using said~~ in accordance with the height of ~~said the~~ the visible portion of ~~said the~~
reference character that is determined in advance for each typeface.

172. (Currently Amended) An information processing apparatus according to claim 171, further comprising:

second character size designation means for designating ~~the~~ size of character data ~~using said~~ in accordance with the height of a rectangular area that a the reference character occupies.

173. (Canceled).

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174. (Currently Amended) An information processing apparatus according to claim 170, wherein ~~said~~ the layout reference information ~~determined by said~~ layout reference information setting means is a feature point on a character string layout reference rectangle that is ~~determined~~ set by using ~~said~~ the height of ~~said~~ the visible portion of ~~said~~ the predetermined reference character and ~~said~~ the width of ~~said~~ the visible portion of ~~said character~~ the printing data, and

wherein ~~said~~ the layout position specified by said layout means is a designated point on a display screen, or an input coordinate position.

175. - 191. (Canceled).

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192. (Currently Amended) An information processing method comprising:

At 1
a contour information extraction step₁ of ~~employing~~ extracting contour information based on printing attributes for printing data to extract contour information for said printing data;

a layout reference information setting step₂ of ~~employing said~~ setting layout reference information that is to be used as a reference for layout of the printing data based on the contour information extracted at in said contour information extraction step to set layout reference information that is to be used as a reference for the layout of said printing data; and

a layout step₃ of laying out ~~said the~~ the printing data based on ~~said the~~ the layout reference information ~~determined at~~ set in said layout reference information setting step,

wherein, when ~~said the~~ the printing data is character data, it is ~~determined at then in~~ set in said layout reference information setting step, ~~the said~~ the layout reference information is set in accordance with the height of a visible portion of a predetermined reference character and the width of a visible portion of ~~said the~~ the printing data.

193. (Currently Amended) An information processing method according to claim 192, further comprising:

a first character size designation step₄ of designating ~~the~~ the size of character data ~~using said in accordance with the height of said the~~ in accordance with the height of said the visible portion of ~~said the~~ the reference character that is determined in advance for each typeface.

194. (Currently Amended) An information processing method according to claim 192, further comprising:

a second character size designation step₂ of designating ~~the~~ size of character data ~~using said~~ in accordance with the height of a rectangular area that a the reference character occupies.

195. (Canceled).

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196. (Currently Amended) An information processing method according to claim 192, wherein ~~said the~~ layout reference information ~~determined at said layout~~ reference information setting step is a feature point on a character string layout reference rectangle that is ~~determined set~~ by using ~~said the~~ height of ~~said the~~ visible portion of ~~said the~~ predetermined reference character and ~~said the~~ width of ~~said the~~ visible portion of ~~said character the printing data~~, and

wherein ~~said the~~ layout position specified ~~at in~~ said layout step is a designated point on a display screen, or an input coordinate position.

197. - 213. (Canceled).

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214. (Currently Amended) A storage medium in which a computer program is stored, said computer program comprising:

a first module for ~~employing~~ extracting contour information based on
printing attributes ~~that are added to~~ for printing data to ~~extract contour information for said~~
~~printing data;~~

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a second module for, when ~~said~~ the printing data is character data,
~~employing the~~ setting layout reference information that is to be used as a reference for
layout of the printing data in accordance with height of a visible portion of a predetermined
reference character, ~~the~~ width of a visible portion of ~~said~~ the printing data, and ~~said~~ the
extracted contour information ~~to set layout reference information that is used as a reference~~
~~for the layout of said printing data; and~~

a third module for laying out ~~said~~ the printing data based on ~~said~~ the layout
reference information that is obtained.